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October 23, 2020

Via U.S. Mail and Email

Anne (Idsal) Austin,
Principal Deputy Assistant Administrator,
Office of Air and Radiation, 6101A,
U.S. Environmental Protection Agency,
1200 Pennsylvania Ave., N.W.,
Washington, DC 20004.

Re: Freedom of Information Act Request

Dear Ms. Austin:

Pursuant to the Freedom of Information Act ("FOIA"), 5 U.S.C. § 552, Volkswagen[1] through counsel hereby requests that the United States Environmental Protection Agency ("EPA") retain and produce—to the extent not previously produced in connection with prior requests[2]—the following records,[3] from any and all EPA offices where they are located:

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1 For purposes of these requests, "Volkswagen" refers to Volkswagen Aktiengesellschaft, Volkswagen Group of America, Inc., Audi Aktiengesellschaft, and Audi of America, LLC.

2 Specifically, the productions made in connection with FOIA requests submitted by the FOIA Group, Inc. with FGI Nos. 19-64651, 19-64652, 19-64653, 19-64654, 19-64655, and 19-64656, or in response to the FOIA request submitted on July 6, 2018 by Brian T. Stansbury of King & Spalding LLP.

3 For purposes of these requests, "records" includes, but is not limited to, public statements, communications, and documents.

1. All records pertaining to EPA's approval or disapproval of vehicle anti-tampering provisions of any State Implementation Plan submitted pursuant to 42 U.S.C. § 7410 ("SIP") by Illinois, Montana, New Hampshire, Ohio, Texas, and Utah. *See* 40 CFR Part 50 Subparts O, BB, KK, SS, & TT. Examples of the current version of these states' anti-tampering provisions are included in the following footnote for reference.[4]

2. All records pertaining to the Texas Commission on Environmental Quality's ("TCEQ") request for guidance from the EPA regarding the effect of the conduct identified in the U.S. Department of Justice's ("DOJ") January 4, 2016 complaint[5] filed on behalf of EPA against Volkswagen on the Motor Vehicle Emissions Simulator ("MOVES") modeling by TCEQ performed in connection with Texas's SIP, including all records of any response from the EPA to TCEQ's request. The TCEQ's request is referenced on page 239 of the following: https://www.tceq.texas.gov/assets/public/implementation/air/sip/dfw/dfw_ad_sip_2016/DFWAD_15014SIP_ado.pdf.

3. All records pertaining to any request made by a state, state agency, or political subdivision of a state regarding the impact of the conduct identified in DOJ's January 4, 2016 complaint on MOVES modeling, including all records of any response from the EPA to such a request.

4. All records pertaining to EPA's determination that the software updates implemented during the recalls campaigns, referenced in Request 5 below, reduced NOx emissions. *See* EPA Am. Compl., ¶ 141, *United States* v. *Volkswagen AG*, No. 16-cv-295 (N.D. Cal. Oct. 7, 2016), Dkt. No. 32-3 ("[O]n-road and laboratory testing . . . showed limited reduction in the rates of emission of NOx from the recalled vehicles."); EPA, Notice of Violation, at 4 (Sept. 18, 2015) ("testing showed only a limited benefit to the recall").

5. All records pertaining to Volkswagen's recall campaigns with the following recall campaign codes: 23N5 (initiated on December 15, 2014), 23N4 (initiated on April 7, 2015), and 23O6 (initiated on April 7, 2015).

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4 *See* Ill. Admin. Code tit. 35, § 240.103; Mont. Admin. R. 17.8.325; N.H. Code Admin. R. Env-A 1102.01; Ohio Admin. Code 3745-80-02; 30 Tex. Admin. Code § 114.20; Utah Admin. Code r. R307-201-4.

5 *See* DOJ Complaint, *United States* v. *Volkswagen AG*, 2:16-cv-10006 (E.D. Mich. Jan. 4, 2016), Dkt. No. 1 ("DOJ Complaint").

6. All records pertaining to directions, instructions, or requests by EPA or CARB to continue applying Volkswagen's 23N5, 23N4, and 23O6 recall campaigns to vehicles, including records pertaining to the reason for any such direction, instruction or request.

7. All records evidencing approvals with regard to the directions, instructions, or requests specified in Request 6 above.

8. All records pertaining to any decision by EPA or CARB to permit Volkswagen to apply the 23N5, 23N4, and 23O6 recall campaigns to vehicles, both before and after EPA issued its notice of violation to Volkswagen on September 18, 2015.

9. All records evidencing approvals with regard to the decision referenced in Request 8 above.

10. All records concerning the impact on emissions of Volkswagen's 23N5, 23N4, and 23O6 recalls.

11. All records pertaining to any reduction of NOx emissions in Florida, Illinois, Montana, New Hampshire, Ohio, Texas, or Utah as a result of Volkswagen's environmental mitigation trust. *See* First Partial Consent Decree, *In re: Volkswagen "Clean Diesel" Mktg., Sales Practices, & Prods. Liab. Litig.*, No. 3:15-md-02672 (N.D. Cal. Oct. 25, 2016), Dkt. No. 2103-1, at 12-18 & Appx. D; Second Partial Consent Decree (May 17, 2017), Dkt. No. 3228-1, at 5, 14-17 & Initial 3.0 Liter Mitigation Allocation Appendix.

12. The vehicle identification number ("VIN") of every vehicle tested in connection with EPA's or CARB's analysis of the software updates installed on the 2.0L Subject Vehicles as described in paragraphs 137 to 141 of the EPA Amended Complaint,[6] including any testing pursuant to the test plans attached hereto as Appendices A and B.

13. All records pertaining to any analysis or testing by EPA or CARB of the diesel particulate filter loading model of the vehicles that received the 23N5, 23N4, and 23O6 recalls.

14. All records pertaining to EPA or CARB's consideration of the authority of a state, state agency, or political subdivision of a state to maintain a legal action for

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6 *United States* v. *Volkswagen AG*, No. 16-cv-295 (N.D. Cal. Oct. 7, 2016), Dkt. No. 32-3.

emissions tampering based upon the Approved Emissions Modifications in connection with the First and Second Partial Consent Decrees. *See* First Partial Consent Decree, *In re: Volkswagen "Clean Diesel" Mktg., Sales Practices, & Prods. Liab. Litig.*, No. 3:15-md-02672 (N.D. Cal. Oct. 25, 2016), Dkt. No. 2103-1, Appx. B; Second Partial Consent Decree (May 17, 2017), Dkt. No. 3228-1, Appx. B.

15. All records pertaining to any legal action brought against Volkswagen by a Non-177 State,[7] state agency, or political subdivision of a Non-177 State arising from the conduct identified in the DOJ Complaint.[8]

16. To the extent not covered by Request 15, all records—including any communications with or involving third parties—pertaining to the request from the United States Court of Appeals for the Ninth Circuit for the Solicitor General of the United States and EPA to provide their "views on whether the [Clean Air Act] preempts a state or its political subdivision from enforcing state or local anti-tampering laws with respect to post-sale vehicles and whether their agreement to settle their federal claims against Volkswagen were intended to foreclose subsequent state or local civil financial penalties." *Counties*, 959 F.3d at 1206 n.4; *see also Env't Prot. Comm'n of Hillsborough Cnty.* v. *Volkswagen Grp. of Am., Inc.*, No. 18-15937 (9th Cir. Aug. 22, 2019), Dkt. 64 (Ninth Circuit request

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7 Non-177 State refers to states that have not adopted California's new motor emission standards pursuant to 42 U.S.C. § 7507, including Alabama, Illinois, Minnesota, Missouri, Montana, New Hampshire, New Mexico, Ohio, Tennessee, Texas, and Wyoming.

8 *See, e.g.*, *In re Volkswagen "Clean Diesel" Marketing, Sales Practices, & Prods. Liab. Litigation* ("*Counties*"), 959 F.3d 1201, 1216 (9th Cir. 2020); *State* v. *Volkswagen AG*, 279 So. 3d 1109 (Ala. 2018); *State ex rel. Yost* v. *Volkswagen Aktiengesellschaft*, 137 N.E.3d 1267 (Ohio Ct. App. 2019); *State* v. *Volkswagen Aktiengesellschaft*, 2019 WL 1220836 (Tenn. Ct. App. Mar. 13, 2019); *State* v. *Volkswagen Aktiengesellschaft*, 2018 WL 6273103 (Minn. Ct. App. Dec. 3, 2018); *State* v. *Volkswagen Aktiengesellschaft*, 2018 WL 3349094 (Mo. Cir. Ct. June 26, 2018); *People* v. *Volkswagen Aktiengesellschaft*, 2018 WL 3384883 (Ill. Cir. Ct. June 5, 2018); *Wyoming* v. *Volkswagen Group of America, Inc.*, No. 16-cv-6646 (N.D. Cal.); *Mont. Dep't Env't Quality* v. *Volkswagen Aktiengesellschaft*, Mont. Dist. No. DDV-2016-1045 (Feb. 21, 2020); Order, *In re Volkswagen Clean Diesel Litig.*, No. D-l-GN-16-000370 (Tex. Dist. Ct. Apr. 11, 2018); *State* v. *Volkswagen Aktiengesellschaft, et al.*, No. 217-2016-cv-00558 (N.H. Super. Ct., Merrimack Cnty.).

for views); *Id.* (Nov. 4, 2019), Dkt. 70 (United States' response declining to file an amicus curiae brief).

If the EPA maintains the records Volkswagen seeks in electronic form, please provide the information in that form. Otherwise, pertinent records may be provided in printed form.

Volkswagen requests these records as part of a fact gathering activity and not for commercial use. If any expenses in excess of $10,000 are incurred in connection with this request, please obtain Volkswagen's approval before any such charges are incurred.

Volkswagen expects a response within 20 working days, as provided by law. If Volkswagen's request is denied in whole or in part, Volkswagen expects a detailed justification for withholding the records.

If you have any questions regarding this request, please contact me at (310) 712-6670 or steinbergm@sullcrom.com.

Thank you for your prompt attention to this matter.

Sincerely yours,

Michael H. Steinberg

cc: National FOIA Office

APPENDIX A

Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

TO: Annette Hebert, Chief AGH 2/27/15
Emissions Compliance, Automotive Regulations and Science Division

Michael Benjamin, Chief MB 3/12/15
Monitoring and Laboratory Division

THROUGH: Mark Fuentes, Asst. Chief
Emissions Compliance, Automotive Regulations and Science Division

FROM: Sharon Lemieux, Chief
In-Use Vehicle Programs Branch

DATE: March 16, 2015

SUBJECT: IN-USE COMPLIANCE PROGRAM EVALUATION OF STRATEGIES ON CERTIFIED ON-ROAD VOLKSWAGEN DIESEL VEHICLES

PROJECT NUMBER: 1Q1502

INTRODUCTION

The Emissions Compliance, Automotive Regulations and Science Division, In-Use Compliance Section (IUCS) will conduct an on-road and laboratory emissions test program on two California certified Volkswagen (VW) diesel vehicles to evaluate the effectiveness of their corrective action for the high NOx conditions discovered by West Virginia University. VW has developed a corrective action to lower the NOx levels to reflect an emissions reduction. The results gathered from this test program will assist staff in determining if the corrective actions taken by VW are sufficient.

VW will provide two vehicles, one vehicle will be Selective Catalytic Reduction (SCR) equipped, and the other vehicle will have a NOx absorber. Both vehicles will be driven in an as-received condition and with the corrective action applied to the system for this test project. VW will deliver the two vehicles for staff to test both on-road and in the Haagen-Smit Laboratory (HSL) chassis dynamometer. The test vehicles will be checked in by staff before beginning the actual operation of on-road testing.

Staff will operate the test vehicles under normal driving conditions on the road in an as-received condition and with the new calibration installed to determine if the suggested

corrective action is properly functioning as per the manufacturer's design. Staff will observe and document any driver warnings that may appear while operating the vehicle over the various test routes. In addition, staff will continuously measure NOx emissions using a Portable Emissions Measurement System (PEMS) provided by VW for each test cycle as the vehicle is operated through the project test routes. Monitoring and Laboratory Division (MLD) may need to provide a PEMS operator to assist in this test program. No particulate matter (PM) samples will be taken while the vehicles are operated on the road. Additional testing will be performed to evaluate NOx and PM emissions on a dynamometer in HSL Test Cell 3. This program will also need the assistance of the Aerosol Analysis and Methods Evaluation Section (AAMES). AAMES will assist this test program by providing, weighing, and handling all necessary particulate filters needed for the duration of the test program. AAMES will provide the particulate filters for the testing in HSL Test Cell 3. AAMES will provide at least 48 filters for the entire duration of testing or as needed (See Attachment 1).

This project is expected to begin in March 2015 and will be completed in approximately 16 weeks.

I. PROGRAM MANAGEMENT

IUCS staff will administer this test program with the assistance of the Portable Emissions Measurement (PEM) Section who will operate the PEMS unit to monitor/measure the exhaust emissions as the vehicle is driven through the designated test route. IUCS will provide a Project Engineer to follow the test vehicles throughout the entire 16 weeks; the Project Engineer will be the contact for all issues related to the completion of this program. The Vehicle Emissions Testing Section (VETS) will provide the Test Engineer for the test vehicle during testing in HSL Test Cell 3; the Test Engineer will be the contact for all emission testing issues related to the completion of this program while the vehicle is only being tested in HSL Test Cell 3.

Any testing performed in HSL shall follow testing protocol as per SOP IUC-TP-01 unless changed by the Project Engineer. The Project Engineer will be the contact person for all issues relating to the completion of this program.

II. REPORT AND CONTACT

Project Engineer: Esther Tse, In-Use Compliance Section, at (626) 350-6402 or echiu@arb.ca.gov

Test Engineer: Tuyen Dinh, Vehicle Emissions Testing Section, at (626) 450-6180 or tdinh@arb.ca.gov

III. VEHICLE ACQUISITION

IUCS staff will meet with VW's representative(s) to determine which vehicles will be selected for this test program. Both vehicles will be the same test group and model years as the vehicle discovered by West Virginia University.

IV. VEHICLE DELIVERY AND CHECK-IN

The VW representative will deliver the test vehicles to HSL and will be received by the Laboratory Logistics and Test Support Section (LLTSS) staff. Vehicles will be checked-in and any pre-existing damage will be documented and photographed upon check-in.

V. VEHICLE MAINTENANCE

Although it is not anticipated to perform maintenance on the test vehicles, if the vehicles need maintenance, LLTSS will perform restorative maintenance on test vehicles under the direction of the Project Engineer or a member of IUCS. Restorative maintenance will be performed per SOP IUC-TP-01 using the In-Use Compliance Restorative Maintenance form (Form IUC003). Variations from SOP IUC-TP-01 may be allowed depending on vehicle requirements and manufacturer recommendations and with the approval of the Project Engineer

VW may request specific maintenance requirements during restorative maintenance.

VI. TEST FUEL REQUIREMENTS

Test vehicles in this program will be tested with certification grade California low sulfur diesel fuel to be provided by VW. VW will deliver a 55 gallon drum of diesel fuel to HSL. Additionally, VW will supply DEF for this project. The fuel volume used for each stage of testing will be specified on the In-Use Compliance Restorative Maintenance Form (Form IUC003) and will be supplied with each vehicle's test parameters to the LLTSS office prior to testing by the Project Engineer.

VII. TESTING PROCEDURES

Each test vehicle will each be driven for five weeks on-road to evaluate how effective VW's corrective action was and how the vehicles compare to what was expected from reviewing the owner's manuals and the manufacturer's certification documentation. The test vehicles will then be tested in HSL Test Cell 3 for three weeks. Two weeks prior to testing the vehicles, AAMES will be notified in order to prepare the filters.

The following on-road testing is separated into five weeks (all methods will be used for both vehicles):

1. PEMS set-up and PEMS correlation with HSL Test Cell 3
2. Baseline testing in HSL Test Cell 3
3. On-road PEMS testing
4. Drivability evaluation
5. Vehicle electronic control module calibration changes will be applied to each vehicle following with a drivability test
6. After calibration testing in HSL Test Cell 3
7. After calibration on-road PEMS testing
8. After calibration drivability test
9. Breakdown and return of vehicle

The following test routes will be utilized for this project:

- Uphill/Downhill Drive Route (Attachment 2)
- Heavy Demand Freeway Route (Attachment 3)

The following test cycles will be performed in HSL Test Cell 3 for about three weeks on each vehicle:

- Baseline testing will consist of FTP, US06, and HWFET
- Correlation between PEMS and dynamometer comparison: both vehicles will each be tested using three test cycles of US06, and three test cycles of UDDS
- PM samples will be taken in HSL Test Cell 3

The test vehicles will be evaluated while driving identified project test routes (i.e., uphill/downhill and freeway routes - see Attachment 2 and 3). The test routes were designed to follow basic everyday driving patterns. The route for the "uphill/downhill" run (Attachment 2) is utilized to operate the vehicle on uphill and downhill conditions which included greater vehicle load at much lower average speeds. In contrast, the "freeway" route (Attachment 3), was characterized by driving primarily on interstate freeways where the speed limit is typically 65 mph. The Project Engineer will determine when each route will be operated for each vehicle.

Each vehicle will take turns being equipped with the VW PEMS unit so that on-road emissions can be continuously monitored/measured throughout each test route. Each test vehicle will have two staff on board while operating the vehicle during its test cycles (i.e., one driver and one staff to operate the PEMS unit). VW's engineers may also accompany staff in the vehicle, provided the vehicle weight is not excessive. The test vehicles will be operated for as many miles as possible during a normal work shift. All safety precautions (i.e., proper securing of equipment in the vehicle) must be taken when operating these vehicles. Staff must adhere to all State and federal traffic laws. In case of an accident, the California

Highway Patrol or local police authority and the Project Engineer must be notified immediately and follow up with ARB's vehicle accident procedures.

In addition, both test vehicles will require exhaust emissions testing (as per the Federal Test Procedures – see Attachment 4) from HSL. PM will be required for this project. The required tests for each test vehicle and test parameters will be indicated on the cover sheet of the In-Use Compliance Restorative Maintenance Form (Form IUC003). Exhaust emissions testing will be conducted in Test Cell 3. Test vehicles will receive a single or a double preconditioning cycle – this will be specified at the time of testing.

With the exceptions of driving the vehicle off the dynamometer rolls (into cold soak or drain & fill) or driving the vehicle from the drain & fill area to the cold soak, all vehicles shall either be pushed by hand or moved with a Stringo-type device. No mule pushers shall be utilized for this program.

VIII. DATA HANDLING AND PROCESSING

All data will be reviewed by the Project Engineer for completeness and accuracy. The PEMS data will be reviewed by the PEM Section staff to ensure data quality and forward the data to the Project Engineer upon its acceptance. All emission data sampled during this project will be analyzed using a PEMS unit; the data generated will not be entered into the Vehicle Emissions Database System (VEDS). Data generated from HSL Test Cell 3 will be stored in VEDS.

All test data will be available to the Project Engineer. The Test Engineer will review all test results for completeness and verify that all tests meet Code of Federal Regulations and ARB requirements and that all documentation is complete. After reviewing and approving the data, the Test Engineer will notify the Project Engineer of the status of the test data. All data will be reviewed by the Project Engineer for completeness and accuracy. Once the test data is deemed valid by the Test Engineer, the Project Engineer will distribute the data to the manufacturer. Under no circumstances shall ARB staff other than the Project Engineer deliver any documentation regarding this test project to the manufacturer representative(s). The Project Engineer will have access to all test data and documentation of the test vehicle during this project.

IX. DOCUMENTATION

It is of the utmost importance that all forms, documents, test data sheets, etc., are accurate and complete. Note that all testing and related documents may be subject to legal review.

X. VERIFICATION OF TEST DATA

The final emission data from the chassis dynamometer tested vehicle shall be verified into Vehicle Testing System (VTS). The Project Engineer will coordinate with the Laboratory Testing Support Section to complete final data verification.

XI. LABORATORY VISITORS

Manufacturer representative will be present for this test project and will be allowed to assist with the program.

XII. PROGRAM FLOWCHART

Attachment 1, Filter Table 1
Attachment 2, Project Test Route 1 is the Uphill/Downhill drive route
Attachment 3, Project Test Route 2 is the Freeway heavy demand freeway route
Attachment 4, Dynamometer Exhaust Emissions Test Flowchart 1

XIII. VEHICLE RELEASE

After the project engineer releases the test vehicle, LLTSS staff will inspect the vehicle and return it to the manufacturer representative or from the entity supplying the vehicle.

Attachment 1

Filter Table 1

Filter Needs of VW In-Use Compliance Program Evaluation			
	Baseline *	**US06 ***	**UDDS ***
Week 1	12 filters		
Week 2		12 filters	12 filters
Week 3 **	TBD	TBD	TBD

*Note **

1. *Four filters will be required per vehicle for each test cycle*
2. *Each test cycle, including the baseline, will be performed three times*

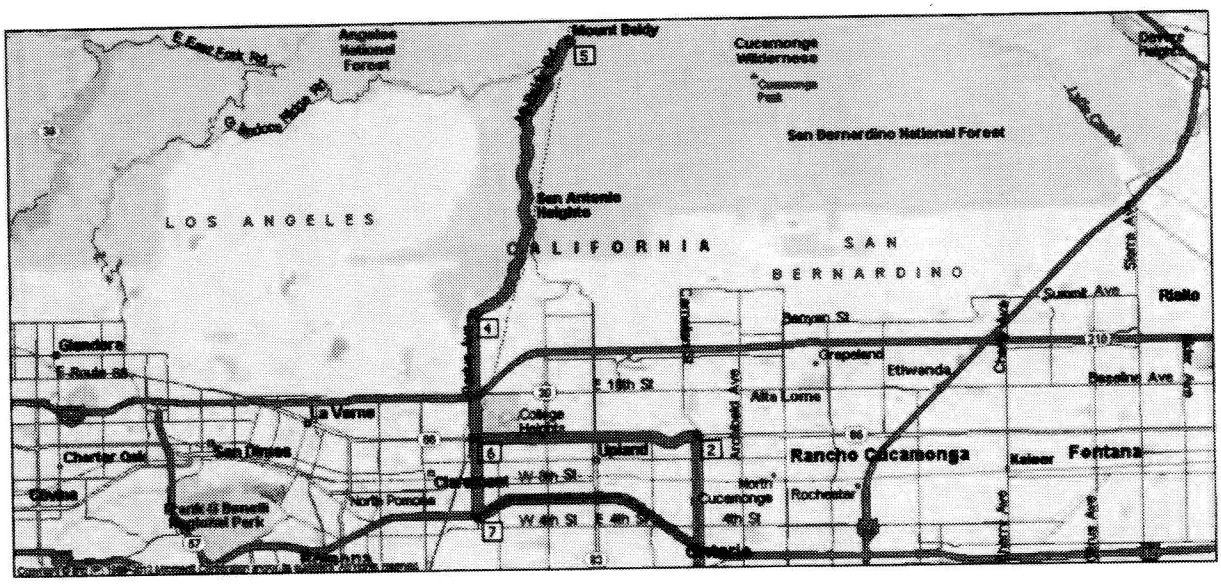
*Note ***

1. *An extra 12 filters will be required in case a baseline or test cycle needs to be retested during Week 3*

Attachment 2

PROJECT TEST ROUTE 1

(Uphill/Downhill)

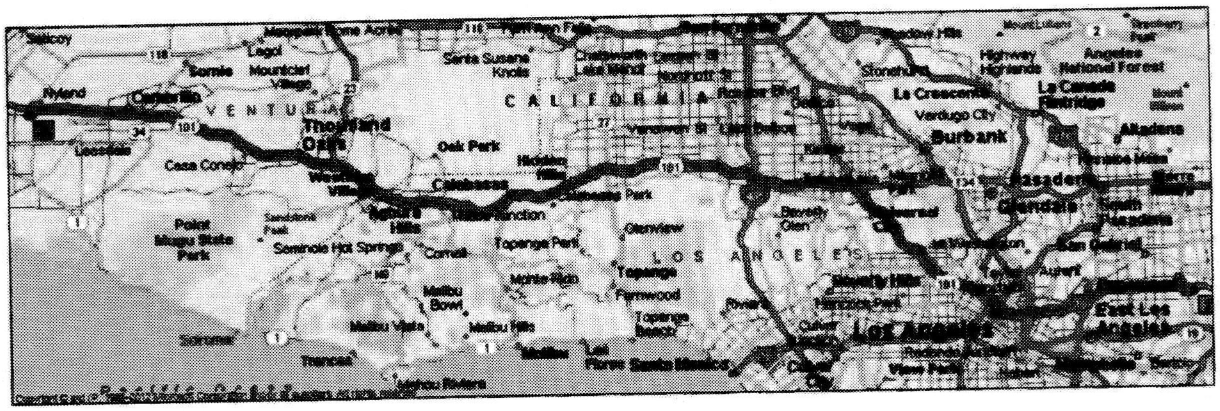


Summary: 36.0 miles (52 minutes)

Mile	Instruction	For
0.0	**Depart Ayres Boutique Suites [204 N Vineyard Ave, Ontario CA 91764, United States, Tel: +(1)-909-9379700] on (N) Vineyard Ave (North)**	**2.9 mi**
2.9	**At 8892 Foothill Blvd, Rancho Cucamonga, CA 91730, turn LEFT (West) onto CA-66 [Foothill Blvd]**	**5.2 mi**
8.1	**At E Foothill Blvd, Claremont, CA 91711, return East on CA-66 [W Foothill Blvd]**	**120 yds**
8.1	Turn LEFT (North) onto Monte Vista Ave	1.0 mi
9.2	Road name changes to Padua Ave	1.8 mi
11.0	Turn RIGHT (East) onto Mt Baldy Rd [Mount Baldy Rd]	43 yds
11.0	**At 4127 Mt Baldy Rd, Claremont, CA 91711, stay on Mt Baldy Rd [Mount Baldy Rd] (East)**	**2.4 mi**
13.4	Keep STRAIGHT onto Mt Baldy Rd	87 yds
13.5	Bear LEFT (North) onto Mt Baldy Rd [Mount Baldy Rd]	4.5 mi
18.0	Bear RIGHT (North) onto Mt Baldy Rd	0.2 mi
18.2	**At Mount Baldy, stay on Mt Baldy Rd (West)**	**0.2 mi**
18.4	Bear LEFT (South) onto Mt Baldy Rd [Mount Baldy Rd]	4.5 mi
23.0	Bear RIGHT (South) onto Mt Baldy Rd	87 yds
23.0	Keep STRAIGHT onto Mt Baldy Rd [Mount Baldy Rd]	2.4 mi
25.4	Turn LEFT (South) onto Padua Ave	1.8 mi
27.2	Road name changes to Monte Vista Ave	1.0 mi
28.3	Turn LEFT (East) onto CA-66 [W Foothill Blvd]	43 yds
28.3	**At 2381 W Foothill Blvd, Upland, CA 91786, stay on CA-66 [W Foothill Blvd] (West)**	**32 yds**
28.3	Turn LEFT (South) onto Monte Vista Ave	1.8 mi
30.1	Turn LEFT (East) onto Palo Verde St	32 yds
30.1	**At 4916 Palo Verde St, Montclair, CA 91763, stay on Palo Verde St (East)**	**65 yds**
30.1	Turn LEFT (North) onto Local road(s)	10 yds
30.1	Take Ramp onto I-10 [San Bernardino Fwy]	5.2 mi
35.3	At exit 54, turn RIGHT onto Ramp	0.2 mi
35.6	Turn RIGHT (South) onto N Vineyard Ave	0.4 mi
36.0	**Arrive 1912 E Holt Blvd, Ontario, CA 91761**	

Attachment 3

PROJECT TEST ROUTE 2
(Freeway)



Summary: 69.2 miles (1 hour, 4 minutes)

Mile	Instruction	For	Toward
0.0	**Depart 9450 Telstar Ave, El Monte, CA 91731 on Telstar Ave (West)**	**0.4 mi**	
0.4	Turn RIGHT (North-West) onto CA-19 [Rosemead Blvd]	0.4 mi	
0.9	Turn LEFT (West) onto Glendon Way	43 yds	
0.9	Take Ramp (LEFT) onto I-10 [San Bernardino Fwy]	7.6 mi	I-10 W / Los Angeles
8.6	Keep STRAIGHT onto San Bernardino Fwy	1.6 mi	I-5 N / US-101 / Los Angeles / Sacramento
10.2	Merge onto US-101 [Santa Ana Fwy]	58.0 mi	
68.2	Keep RIGHT onto Ramp	0.2 mi	Santa Clara Ave / Rice Ave
68.4	Turn RIGHT (North) onto Santa Clara Ave	0.1 mi	
68.5	Turn LEFT (South-West) onto N Rice Ave	0.4 mi	
68.9	Turn RIGHT (West) onto E Gonzales Rd	0.2 mi	
69.1	Turn LEFT (South) onto Solar Dr	131 yds	
69.2	**Arrive Sunbelt Enterprises [1801 Solar Dr, Oxnard CA 93030, United States, Tel: +(1)-805-6040700]**		

Attachment 4

Dynamometer Exhaust Emissions Test Flowchart 1

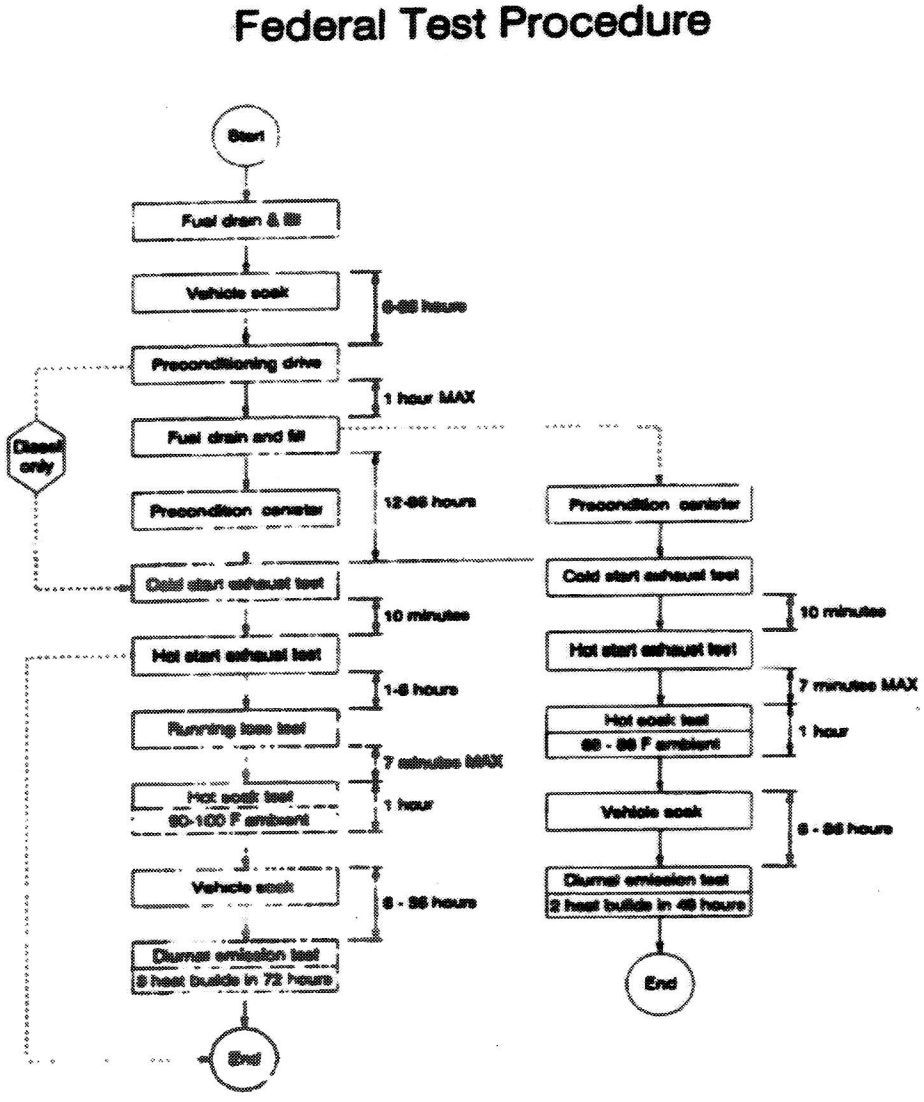


Figure B96-10 Test sequence

[58 FR 16034, Mar. 24, 1993, as amended at 59 FR 48508, Sept. 21, 1994; 60 FR 43993, Aug. 23, 1995]

APPENDIX B

TEST PLAN APPROVAL SLIP

(Please ensure all have initialed)

SEQUENCE	INITIAL/DATE
1. **Author**	Steven M.
2. **Section Manager** (for review)	SAM P.
3. **Branch Secretary** (for tracking)	
4. **Branch Chief** (for review)	Vernon J
5. **Robert Gammariello** (for review)	SD FOR RTG
6. **Tom Valencia** (for review) ,	TAV 2/12/16
7. **Tom's Secretary** (tracking)	
8. Mike Regenfuss (for review)	MRR 2/4/16
9. Sharon Lenicek (review)	2/12/16
10. **Tao Huai, MLD** (for review)	Tao
11. **Division Secretary** (tracking)	
12. **Mark Fuentes** (signature)	2/16/16
13. **MLD Div. Chief** (signature)	Michael Benjamin
14. **Robert Gammariello** (issue #)	

Comments:

_____

_____

_____

Rev 9/11/2015

Air Resources Board

Mary D. Nichols, Chair
9480 Telstar Avenue, Suite 4
El Monte, California 91731 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

TO: Mark Fuentes, Assistant Division Chief
Emissions Compliance, Automotive Regulations and Science Division

Michael Benjamin, Chief MB
Monitoring and Laboratory Division

THROUGH: Karen Magliano, Chief
Air Quality Planning and Science Division

Thomas Valencia, Chief TAV
Haagen-Smit Laboratory Engineering and Testing Branch
Emissions Compliance, Automotive Regulations and Science Division

Sharon Lemieux, Chief
In-Use Programs Branch
Emissions Compliance, Automotive Regulations and Science Division

Michael Regenfuss, Chief MJR
On Board Diagnostic Branch
Emissions Compliance, Automotive Regulations and Science Division

Robert Gammariello, Chief SD for RTG
Laboratory Data Support Branch
Emissions Compliance, Automotive Regulations and Science Division

FROM: Vernon Hughes, Chief VH
Mobile Source Analysis Branch
Air Quality Planning and Science Division

DATE: 2/5/2016

SUBJECT: VEHICLE TEST PLAN FOR VW 2.0 LITER LIGHT-DUTY DIESEL VEHICLE EMISSION INVENTORY ASSESSMENT

PROJECT NUMBER: 1R1601

Confidential & Deliberative

INTRODUCTION

This document describes the vehicle testing plan to generate data for the Mobile Source Analysis Branch (MSAB) of the Air Quality Planning and Science Division (AQPSD) to assess the emission impact of VW's Clean Air Act (CAA) violations.

The vehicle test groups affected by VW's CAA violations and for which the emissions impact will be assessed are identified in Table 1. The Gen 1 – 3 designation in the first column refers to the exhaust after-treatment technologies that were installed on the model year 2009 – 2015 VW vehicles. A brief description of each technology is provided below the table.

Table 1 Affected Test Groups by VW 2.0 Liter TDI CAA Violations

Technology*	Model Year	Test Group	Cert Level	Models
Gen 1a	2009	9VWXV02.035N	L2LEV	Jetta
Gen 1a	2009	9VWXV02.0U5N	L2ULV	Jetta, Jetta wagon
Gen 1a	2010	AVWXV02.0U5N	L2ULV	Audi A3, VW; Golf, Jetta, Jetta wagon
Gen 1a	2011	BVWXV02.0U5N	L2ULV	Audi A3, VW; Golf, Jetta, Jetta wagon
Gen 2	2012	CVWXV02.0U4S	L2ULV	Passat
Gen 1a	2012	CVWXV02.0U5N	L2ULV	Audi A3, VW; Golf, Jetta, Jetta wagon
Gen 2	2013	DVWXV02.0U4S	L2ULV	Passat
Gen 1b	2013	DVWXV02.0U5N	L2ULV	Audi A3, VW; Golf, Jetta, Jetta wagon, Beetle, Beetle Conv.
Gen 1b	2014	EVGAV02.0U5N	L2ULV	Audi A3, VW; Golf, Jetta, Jetta wagon, Beetle, Beetle Conv.
Gen 2	2014	EVWXV02.0U4S	L2ULV	Passat
Gen 3	2015	FVGAV02.0VAL	ULEV125	Audi A3, VW; Golf, Jetta, Jetta wagon, Beetle, Beetle Conv., Passat

*The change in OBD thresholds from 2012 to 2013 model years may have resulted in changes to the 2013 and 2014 MY Gen 1 vehicles. As a result in this document, 2009 – 2012 MY Gen 1 vehicles are referred to as "Gen 1a" and 2013 – 2014 MY Gen 1 vehicles are referred to as "Gen 1b".

- **Gen 1 (LNT):** To attain the LEV2 emission levels, Volkswagen used the Lean NOx Trap (LNT) system for exhaust gas after-treatment. Use of the LNT requires new regeneration modes. A sub-stoichiometric exhaust gas composition is necessary for the regeneration of the NOx storage catalytic converter.
- **Gen 2 (SCR):** In 2012, Volkswagen subsequently introduced a Selective Catalyst Reduction (SCR) system in the Passat 2.0L TDI for NOx treatment. After exiting the oxidation catalyst/diesel particulate filter assembly, the gases are sprayed with a reduction agent (urea) using the SCR injection valve. The gases then enter the SCR reduction catalysts, where NOx is reduced.

- **Gen 3 (SCR)**: The EA288 TDI engine with the LEV3 ULEV125 rating uses a low-pressure EGR system to reduce engine-out NOx emissions. The EA 288 after-treatment system combines an oxidizing catalytic converter and a diesel particulate filter into a single module. Within the module, the diesel particulate filter possesses an SCR coating for NOx reduction.

DIESEL EMISSIONS IMPACT ASSESSMENT

Both chassis dynamometer test data and PEMS data from a companion project (1Q1502) and this project (1R1601) will be used to estimate the emissions impact of the aforementioned violation. The other, still ongoing project (1Q1502), which is being overseen by ARB's Emissions Compliance, Automotive Regulations and Science (ECARS) division, will provide emissions data from the seven vehicles shown below in Table 2.

Table 2. VW 2.0 Liter Diesel Vehicles Tested Under Test Program 1Q1502

1Q1502 Veh #	Technology	Model	Model Year	Test Group	Cert Level	Engine Size
1	Gen 2	Passat	2012	CVWXV02.0U4S	L2ULV	2.0 L
2	Gen 3	Jetta	2015	FVGAV02.0VAL	ULEV125	2.0 L
3	Gen 3	Golf	2016	GVGAV02.0VAL	ULEV125	2.0 L
4	Gen 3	Golf	2016	GVGAV02.0VAL	ULEV125	2.0 L
5	Gen 1a	Jetta	2011	BVWXV02.0U5N	L2ULV	2.0 L
6	Gen 2	Golf	2012	CVWXV02.0U5N	L2ULV	2.0 L
7	Gen 3	Passat	2016	FVGAV02.0VAL	ULEV125	2.0 L

Project 1R1601 is intended to fill model year and after-treatment 'gaps' around the vehicles already being tested in 1Q1502 (i.e., taking into account the population distributions of model year and technology combinations from Table 1within the California-registered vehicle database).

The data collected from both plans will be utilized to develop an estimate of excess NOx emissions. Ten specific vehicles to be tested under 1R1601 are listed in Table 4 and should not be the same vehicles that are procured and tested under 1Q1502. These diesel passenger cars include model years from 2009 to 2015 and will be tested using both regulatory cycles and special cycles (SPC03 and SPC04) as described below:

Regulatory Cycles: For this program chassis dynamometer driving schedules used for emission certification testing will be followed (i.e. FTP and US06). Emissions measured under these driving cycles represent conditions where a defeat device does

not bypass, or render inoperative elements of a vehicle's emission control system. Although data from this set of measurements will not be directly used for the emission inventory analysis, it can be used to confirm the impact of the defeat device when compared either to on-road testing (i.e., PEMS) or chassis dynamometer testing under special cycles (i.e., SPC03 and SPC04) as described next.

Special Cycles (SPC03 and SPC04): A suite of driving cycles developed in other ARB test projects (i.e., 1Q1502 and 2R0901) that may circumvent the VW defeat devices. The special cycles were used to evaluate the consistency in emissions and emission controls relative to the certification cycles and to assess the performance of disclosed and undisclosed auxiliary emissions control devices (AECDs).

Each vehicle will be tested on the FTP, UC, and US06 regulatory test cycles as well as special cycles SPC03 and SPC04 (See Attachments 1 and 2). Preconditioning cycles (FTP 72) will be performed for all cold start tests (i.e., FTP and UC only); ***no cold start is needed for special cycles***. As part of the "pre-conditioning" procedure, the vehicle will be operated on a constant speed cruise of 50 mph for 10 min (i.e., prep-cycle). The vehicle is then brought down to idle and keyed-off for 1 min before the SPC03/SPC04 test is conducted. For SPC03 and SPC04, emissions from all phases will be collected in separate bags (i.e., 7 bags from SPC03 and 6 bags from SPC04). Within SPC03 and SPC04, emissions from the 20 sec idle periods between phases will be collected. One valid test for each test type shall be completed. For four vehicles requiring the modal SPC04 test (as identified in Table 3 of the next section), the bags will be collected from the latter 4 phases of the test.

Test Schedules

A. For vehicles selected for PEMS and modal data collection:

i. Day 1
   1. FTP Cold – Modal
   2. US06 – Non Modal
   3. 10 min Prep
   4. SC04 Non Modal – 7 bags

ii. Day 2
   1. UC Cold – Non Modal
   2. 10 min Prep
   3. SC04 – Modal
   4. 10 min Prep
   5. SC03 – Non Modal

B. For vehicles NOT selected for PEMS and modal data collection:

i. Day 1
   1. FTP Cold – Non Modal
   2. US06 – Non Modal
   3. 10 min Prep
   4. SC04 Non Modal – 7 bags

ii. Day 2
   1. UC Cold – Non Modal
   2. 10 min Prep
   3. SC03 – Non Modal

PM Regeneration
Should a PM regeneration event occur in the middle of a test, the following steps are to be followed:

a. The test should be completed
b. The vehicle will be operated on a steady state cruise of 50 mph for 20 min
c. The Test Engineer will add a comment in VTS regarding the PM regeneration (e.g., identify in quotes "REGEN") to provide the project engineer the ability to query the data to determine the total number of regeneration events for each vehicle.

VEHICLE DESCRIPTION AND ACQUISITION (1R1601)

A total of ten VW 2.0 liter light-duty diesel vehicles will be tested under Project 1R1601 (Table 3).

The Testing Operations Support Section (TOSS) in coordination with the project engineer will request ARB's vehicle procurement contractor, Automotive Testing and Development Services, Inc. (ATDS), to procure test vehicles.

IMPORTANT: Vehicles # 3, 5, 6 and 10 (from Table 3, below) will be PEMS tested first. These vehicles should not be scanned (i.e., plugged in) using OBD scanner tools at all prior to the PEMS testing.

Pre-Recall Vehicles: Three pre-recall vehicles (i.e., vehicles that have not been reflashed yet) will be procured, one each of the following technologies: Gen 1a, Gen 1b, and Gen 2. This corresponds to vehicle numbers 3, 5, and 6 in Table 3 (red text). The project engineer

will provide a list of pre-recall VINs. TOSS will work with ATDS to procure the three pre-recall vehicles noted below.

Table 3. Matrix of 1R1601 VW 2.0 Liter Diesel Test Vehicles*

ARB Veh. #	Tech.**	Model	Model Year	Test Group	Cert Level	Engine Size	Modal (FTP & SPC04) + PEMS	Recall Status
1	Gen 1b	Jetta SW	2013	DVWXV02.0U5N	L2ULV	2.0 L	TBD	TBD
2	Gen 1a	Jetta 4D	2012	CVWXV02.0U5N	L2ULV	2.0 L	TBD	TBD
3	Gen 1a	Jetta SW	2010	AVWXV02.0U5N	L2ULV	2.0 L	YES	NOT Reflashed
4	Gen 1a	Golf 4H(5D)	2012	CVWXV02.0U5N	L2ULV	2.0 L	TBD	TBD
5	Gen 1b	Jetta SW	2014	EVWXV02.0U5N	L2ULV	2.0 L	YES	NOT Reflashed
6	Gen 2	Passat 4D	2013	DVWXV02.0U4S	L2ULV	2.0 L	YES	NOT Reflashed
7	Gen 1b	Golf 4H(5D)	2013	DVWXV02.0U5N	L2ULV	2.0 L	TBD	TBD
8	Gen 1a	Jetta 4D	2009	9VWXV02.0U5N	L2ULV	2.0 L	TBD	TBD
9	Gen 2	Passat 4D	2014	EVWXV02.0U4S	L2ULV	2.0 L	TBD	TBD
10	Gen 3	Golf	2015	FVGAV02.0VAL	ULEV125	2.0 L	YES	NO Recalls

*As described previously, in order to characterize the emissions impacts from the test groups listed in Table 1, data collected from the ten vehicles under this test plan, 1R1601, will augment data being collected from seven vehicles under test program 1Q1502.

**The change in OBD thresholds from 2012 to 2013 model years may have resulted in changes to the 2013 and 2014 MY Gen 1 vehicles. As a result in this document, 2009 – 2012 MY Gen 1 vehicles are referred to as "Gen 1a" and 2013 – 2014 MY Gen 1 vehicles are referred to as "Gen 1b".

Vehicles # 3, 5, 6 and 10 (from Table 3) will have modal FTP and modal special cycle 4 and will also be PEMS tested. ***IMPORTANT: Vehicles # 3, 5, 6 and 10 will be PEMS tested first – before any other testing -- without being scanned using OBD scanner tools. These vehicles should not be scanned (i.e., plugged in) using OBD scanner tools at all prior to the first rounds of PEMS testing.*** *As mentioned in the "ON-ROAD PEMS TESTING" section of this test plan, during the PEMS testing, ECU data will be collected only on the latter half of test routes/repeats. The Project Engineer will inform PEMS engineer on the test routes/repeats that ECU data collection will be needed.*

For other vehicles, chassis dyno testing can be conducted first. These vehicles can be smog checked (i.e., scanned using an OBD tool) prior to the dyno testing.

IMPORTANT*: For all chassis dyno test cycles (FTP, UC, US06, SPC03, and SPC04), OBD data-stream parameters such as engine speed, engine load, ignition timing, pedal position, etc. will be logged during vehicle operations.*

This test program is anticipated to start in the beginning of February 2016 and be completed in 4-6 weeks.

PROGRAM MANAGEMENT

The sections and staff that will be contributing to this program include the Air Quality Planning and Science Division's (AQPSD) Mobile Source Analysis Branch (project lead and coordination); Testing Operations Support Section (vehicle procurement and project support); In-Use and Inventory Testing Section (vehicle testing); In-Use Vehicle Programs Branch (On-road PEMS drivers) and On-Board Diagnostic Branch (OBD data analysis), and the Monitoring and Laboratory Division's Portable Emissions Measurement Section (PEMS testing).

REPORT AND CONTACT

Project Manager: Sam Pournazeri, On-Road Model Development Section, AQPSD, at (916)322-2022 or sam.pournazeri@arb.ca.gov

Project Engineer: Steven Magbuhat, On-Road Light-Duty Analysis Section, AQPSD, at (626) 450-6142 or steven.magbuhat@arb.ca.gov

Backup Project Engineer: Michael Kamboures, On-Road Light-Duty Analysis Section, AQPSD, at (626) 350-6565 or Michael Kambouris@arb.ca.gov

Cell 1 Test Engineer: Saul Ortega, Advanced Technologies & Methods Evaluation Section, ECARS at (626) 575-6854 or saul.ortega@arb.ca.gov

Cell 3 Test Engineer: Tuyen Dinh, In-Use and Inventory testing Support Section, ECARS, at (626) 450-6180 or tdinh@arb.ca.gov

PEMS Engineer: Stephanie Maalouf, Portable Emissions Measurement Section, MLD, at (626) 350-6534 or Stephanie.Maalouf@arb.ca.gov

Backup PEMS Engineer: Berj Der Boghossian, Portable Emissions Measurement Section, MLD, at (626) 575-6711 or Berj.DerBoghossian@arb.ca.gov

OBD Engineer: Frederico Garza, Gasoline On-Board Diagnostics Section, ECARS, at (626) 575-6731 or Frederico.Garza@arb.ca.gov

Backup OBD Engineer: Shabnam Dilmaghani, On-Board Diagnostics Program Development Section, ECARS, at (626) 575-6752 or Shabnam.Dilmaghani@arb.ca.gov

TESTING FACILITY

This program will be conducted in Cells 1, 3, and/or 7 at ARB's HSL in El Monte, CA.

ON-ROAD PEMS TESTING

In addition to chassis dynamometer emission testing, the vehicle will be equipped with a PEMS unit so that on-road emissions can be continuously measured throughout each test route. All test cell and PEMS equipment shall meet their respective calibration and quality control checks for the duration of this project. PEMS staff will outfit the test vehicle with a PEMS unit for on-road testing. The on-road PEMS testing will be conducted on two different routes. Drivers will be provided by In-Use Programs Branch and Haagen-Smit Laboratory Engineering and Testing Branch.

Route 1 – Uphill/downhill drive route (Ontario to Mt. Baldy). 2 round trips without OBD monitoring, followed by 2 round trips with OBD monitoring.

Route 2 – Heavy demand freeway route (El Monte to Oxnard). 2 round trips without OBD monitoring, followed by 2 round trips with OBD monitoring.

For these routes PEMS data will be collected. However, data for each sequence of the drive mentioned in the preceding text should be saved into separate files.

IMPORTANT: Vehicles # 3, 5, 6 and 10 will be PEMS tested first without being scanned using OBD scanner tools. These vehicles should not be scanned (i.e., plugged in) using OBD scanner tools at all prior to the first rounds of PEMS testing. *ECU data will be collected only on the latter half of test routes/repeats. The Project Engineer will inform the PEMS engineer as to the test routes/repeats that ECU data collection will be needed.*

The Project Engineer will send an email to TOSS staff to acquire tow hitches for those vehicles being PEMS tested.

MEASURED PARAMETERS

All target measurements in this project are summarized in Table 3.

Table 4. Sampling and Reporting on Target Data

Target Data	Pollutants / Parameters	Sample Collection Method	QC	Validation and Report
Criteria Pollutants	THC, NMHC, NO_X, CO, CO_2, CH_4	Bag	Test Engineer	Project Engineer
Real-Time Gaseous	THC, NO_X, CO, CO_2,	Test Cell Modal Bench 1 Hz	Test Engineer	Project Engineer
OBD	[1]OBD data stream	OBD tool	OBD Engineer	OBD Engineer
On-Road PEMS	THC, NO_X, CO, CO_2	PEMS 1 Hz	PEMS Engineer	PEMS Engineer

All test parameters will be provided by the project engineer. The project engineer may require additional testing, including additional test cycles, for any of the vehicle in this program.

DATA MANAGEMENT

The Test Engineer/OBD Engineer/PEMS Engineer using standard protocols to ensure a valid test, will review the test data, emission results, and the presence of violations. In case of test aborts or invalidation of data, the test will be repeated and the reasons for test aborts will be documented. The Test Engineer/OBD Engineer/PEMS Engineer will communicate testing status to the Project Engineer.

The Project Engineer will evaluate the needs for additional test data to accomplish the objectives of the project. The final emission data from the chassis dynamometer tested vehicle shall be verified by the Project Engineer who will coordinate with the Laboratory Data Support Branch to complete final data verification within one month of the completed program.

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[1] OBD instruments and tools will be provided and configured by the OBD engineers. OBD data-stream parameters such as engine speed, engine load, ignition timing, pedal position, etc. will be logged during vehicle operations.

VEHICLE DELIVERY AND CHECK-IN

ARB's vehicle procurement contractor ATDS will deliver the test vehicles to HSL and be received by TOSS staff. Upon vehicle delivery to ARB, the TOSS staff will:

- Check in vehicles per the TOSS standard operating procedures (SOP) and ensure all applicable paperwork is complete and correct; notify the Project Engineer of any issues.

- Notify the Project Engineer when the vehicle is being checked in.
  - The Project Engineer should be present during vehicle check-in
  - If the Project Engineer is unable to attend the check-in process, TOSS staff will check in the test vehicle and hold the vehicle until the Project Engineer is available
  - TOSS staff will send an e-mail to the Project Engineer to alert of any discrepancies in the vehicle identification number or any other vehicle information errors

IMPORTANT: Vehicles # 3, 5, 6 and 10 will be PEMS tested first. *These vehicles should not be scanned (i.e., plugged in) using OBD scanner tools at all prior to the PEMS testing.*

VEHICLE MAINTENANCE

Although it is not anticipated to perform maintenance on the test vehicle, if the vehicle needs maintenance, TOSS will perform restorative maintenance on the test vehicle under the direction of the Project Engineer. No work shall be performed on the vehicle without the approval of the Project Engineer.

TEST FUEL AND DIESEL EXHAUST FLUID REQUIREMENTS

Test vehicles in this program will be tested with commercial grade California Ultra-low Sulfur Diesel fuel. All vehicle emission testing will be performed with the fuel already present in the vehicle when possible. Immediately after vehicle pick-up, the Contractor will add fuel to the owner's vehicle if the vehicle's fuel gauge indicates less than a full tank. If required, ARB will supply the diesel exhaust fluid, for this project.

TOSS will ensure a fuel sample is taken from all accepted vehicles. The Project Engineer will fill out a fuel analysis request form for each vehicle and have the fuel sample delivery to ARB chemistry laboratory. The ECARS Fuel Analysis and Methods Evaluation Section will be asked to analyze the fuel parameters of the sampled fuel.

QUALITY CONTROL

All applicable test cell SOPs should be followed and weekly quality assurance (QC) should be performed, verified and documented prior to conducting emission testing.
Only tests meeting all weekly quality control criteria will be used for data analysis. This includes but is not limited to dynamometer speed and load accuracy checks, CVS propane recovery tests, analyzer responses to gas standards, and tests of the accuracy of environmental measurements (barometric pressure, dew point, and temperature).

DOCUMENTATION

It is of the utmost importance that all forms, documents, test data sheets, etc., are accurate and complete. Note that all testing and related documents may be subject to legal review.

VEHICLE RELEASE

After the Project Engineer releases the test vehicle, TOSS staff will inspect the vehicle and return it to ATDS.

ATTACHMENTS

1. Special Cycle 3
2. Special Cycle 4
3. Chain of Custody Form
4. Vehicle Testing Matrix
5. Telephone Questionnaire
6. PEMS Route 1
7. PEMS Route 2

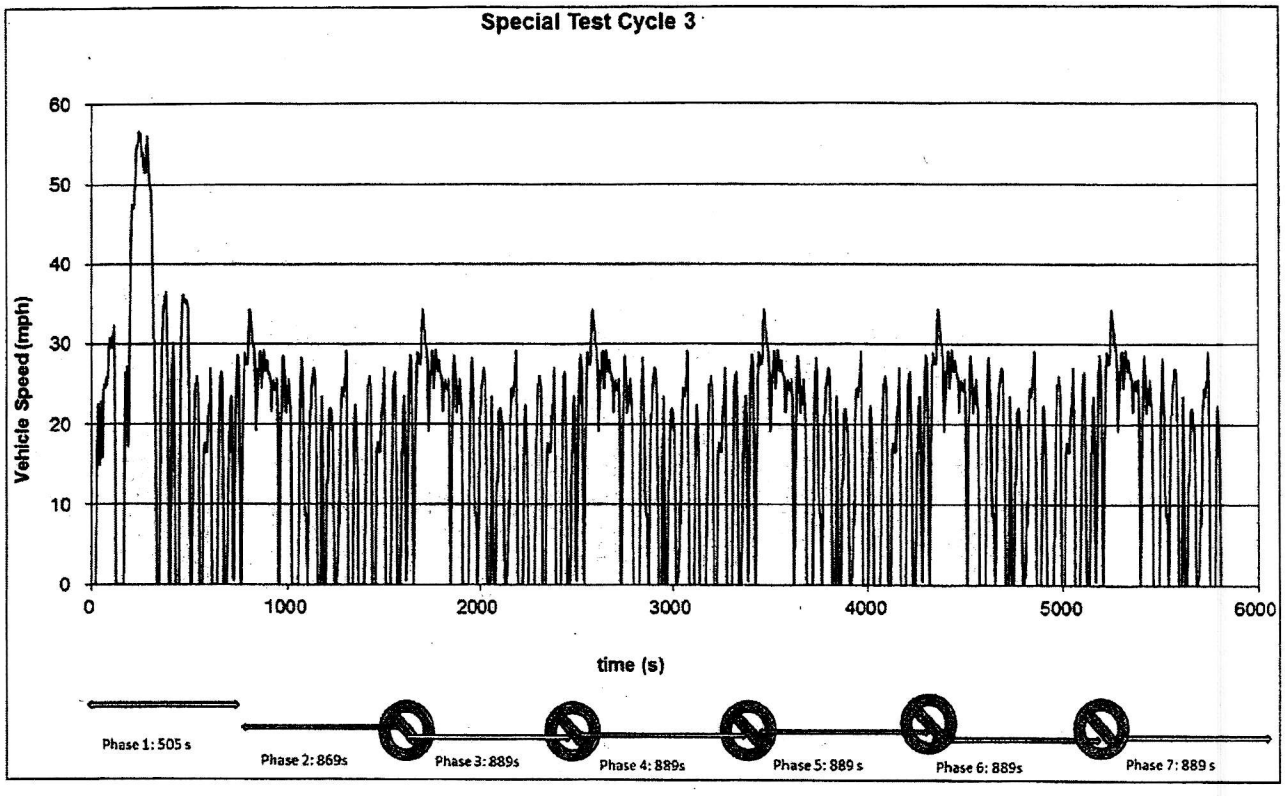
cc:

Dr. Todd P. Sax, Chief
Enforcement Division

Diane H. Kiyota, Senior Attorney Staff Counsel
Legal Executive Office

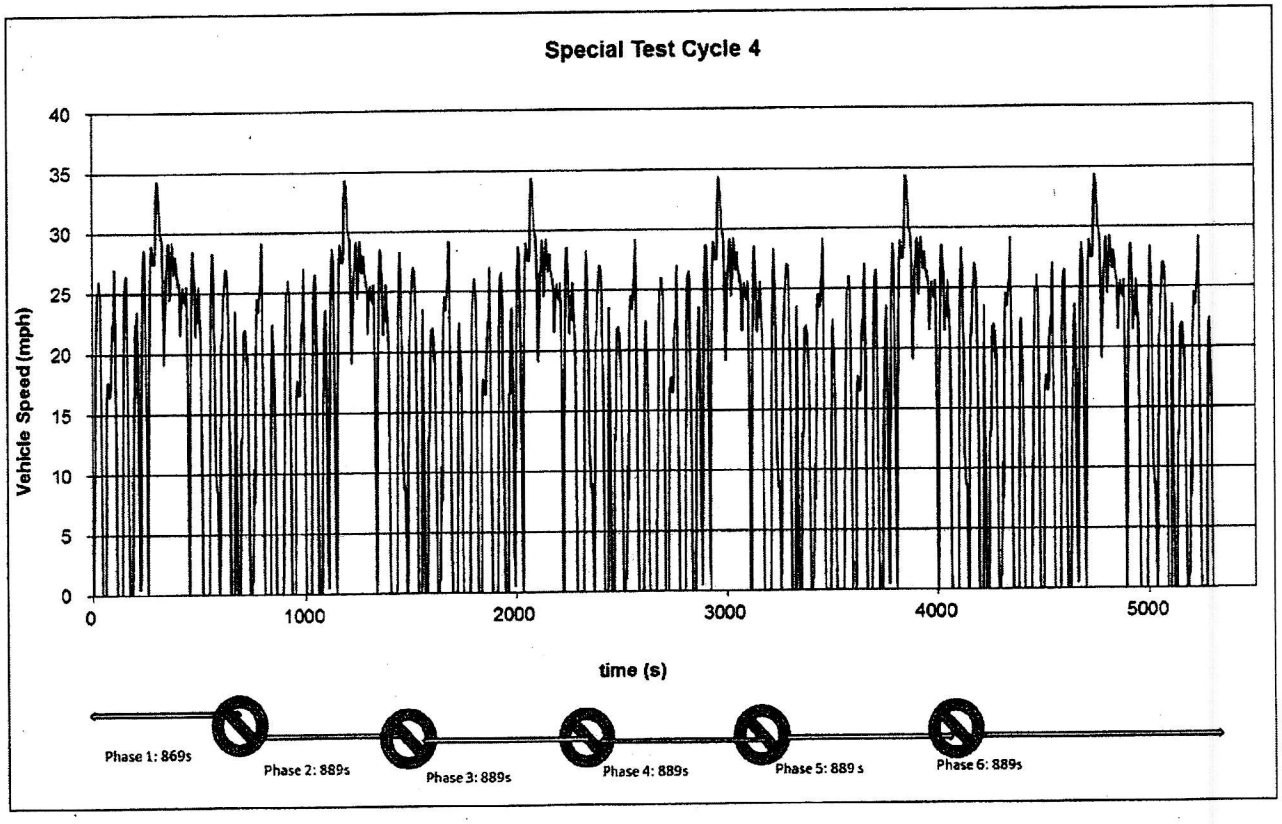
(Confidential & Deliberative)

Attachment 1



(Confidential & Deliberative)

Attachment 2



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Attachment 3

Chain of Custody

Project No.: _____ VIN.: _____
Vehicle ID No.: _____ License No.: _____ Page ____ of ____
Recall Status: _____
Project Engineer (s) _____ _____

Persons performing task shall sign, date and fill-in time task is completed.

Telephone Questionnaire:	_____	Date: _____	Time: _____	Odometer: _____
Delivery Driver:	_____	Date: _____	Time: _____	Odometer: _____
Vehicle Check-In:	_____	Date: _____	Time: _____	Odometer: _____
Acceptance Checks:	_____	Date: _____	Time: _____	Odometer: _____
Fuel Exchange:	_____	Date: _____	Time: _____	Odometer: _____
Drive Evaluation:	_____	Date: _____	Time: _____	Odometer: _____
Maintenance:	_____	Date: _____	Time: _____	Odometer: _____
Check Fuel Level:	_____	Date: _____	Time: _____	Odometer: _____
Road Load Derivation:	_____	Date: _____	Time: _____	Odometer: _____
Preconditioning Drive:	_____	Date: _____	Time: _____	Odometer: _____
Cold Soak :	_____	Date: _____	Time: _____	Odometer: _____
Cold Start FTP:	_____	Date: _____	Time: _____	Odometer: _____
US06:	_____	Date: _____	Time: _____	Odometer: _____
Preconditioning Drive:	_____	Date: _____	Time: _____	Odometer: _____
Cold Soak :	_____	Date: _____	Time: _____	Odometer: _____
Cold Start UC:	_____	Date: _____	Time: _____	Odometer: _____
Special Cycle 3	_____	Date: _____	Time: _____	Odometer: _____
Special Cycle 4:	_____	Date: _____	Time: _____	Odometer: _____
PEMS route 1:	_____	Date: _____	Time: _____	Odometer: _____
PEMS route 2:	_____	Date: _____	Time: _____	Odometer: _____
Other:	_____	Date: _____	Time: _____	Odometer: _____
Other :	_____	Date: _____	Time: _____	Odometer: _____
Other:	_____	Date: _____	Time: _____	Odometer: _____
Post Test Inspection:	_____	Date: _____	Time: _____	Odometer: _____
Vehicle Release:	_____	Date: _____	Time: _____	Odometer: _____
Vehicle Rejected:	_____	Date: _____	Time: _____	Odometer: _____

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Attachment 4

Vehicle Testing Matrix

Veh #	FTP	US06	UC	SC3	SC4	PEMS Route 1	PEMS Route 2
1						X	X
2							
3							
4						X	X
5							
6							
7						X	X
8							
9							
10							

(Confidential & Deliberative)

Attachment 5

Vehicle Procurement Telephone Questionnaire

In order to confirm your vehicle's eligibility for the test program, I am going to ask you some questions about your vehicle's maintenance and usage history. You should answer these questions to the best of your knowledge and please indicate if you are not sure of something.

1: Name _____ Phone:_____

Model:_____ VIN:_____

Model Year:_____

Transmission: _____Automatic _____Manual

Odometer Mileage:_____

2: Has the odometer ever failed to function properly? ____Yes ___ No

3: Has your vehicle ever had extensive collision damage (i.e. $5000 or more) or major engine repair (piston, crank, cylinder head, engine block)? ____Yes ___ No

4: Has your vehicle been used to pull trailers or racing?

____Yes ___ No

5a: Has your "Check Engine" light ever been on during normal vehicle operation at any time other than start up? ____Yes ___ No

5b: If yes, has your "Check Engine" light flashed continuously?

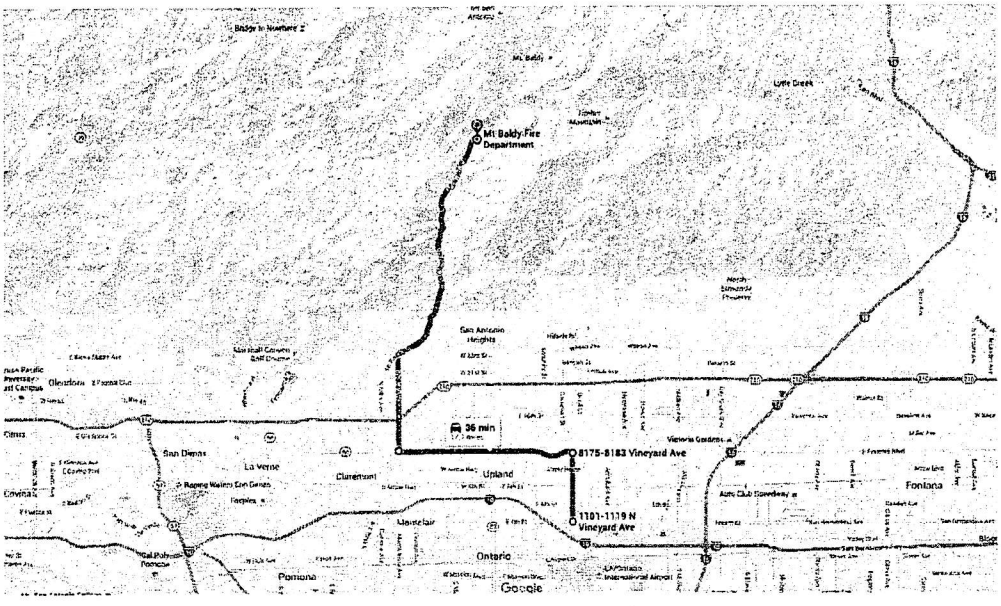
____Yes ___ No

6: In 2014 VW sent you a recall to reflash your computer. Have you had this recall completed? ____Yes ___ No

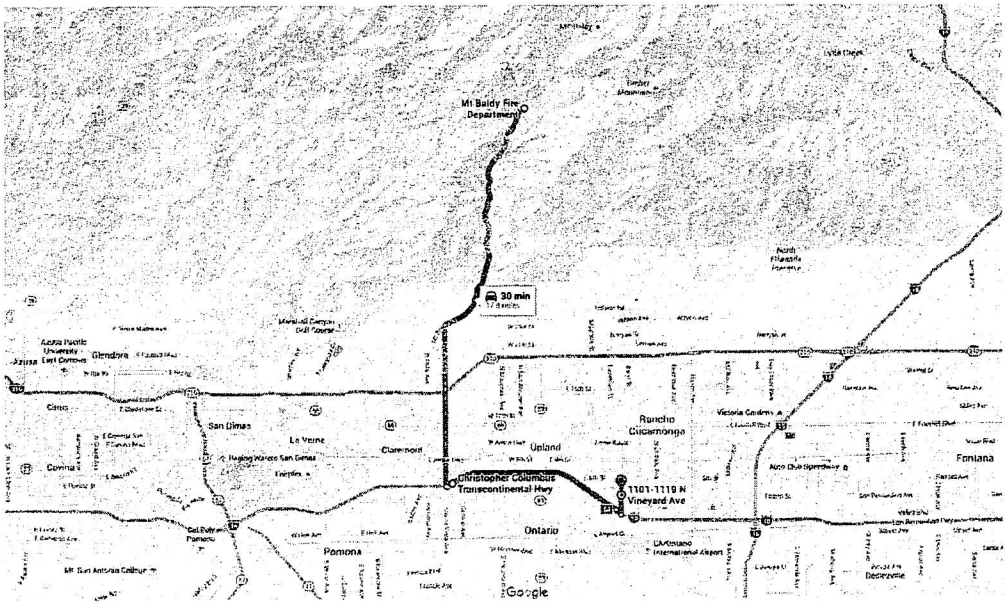
If the participant answered "YES" to questions 2, 3, 4 and 5b, this vehicle is not eligible to participate.

Attachment 6

PROJECT TEST ROUTE 1 (Uphill/Downhill)



1101 N. Vineyard Ave, Ontario to Mt Baldy Fire Station



Mt Baldy Fire Station return to 1101 N. Vineyard Ave, Ontario

(Confidential & Deliberative)

Route 1 Uphill:

Start at 1101-1119 N Vineyard Ave, Ontario, CA 91764
Head north on N Vineyard Ave toward E Harvard Privado
2.0 mi to 8175-8183 Vineyard Ave, Rancho Cucamonga, CA 91730
Head north on Vineyard Ave
Use the left 2 lanes to turn left onto E Foothill Blvd
5.1 mi
Turn right onto Monte Vista Ave
171 ft, 13 min (5.1 mi)
1070-1242 Monte Vista Ave, Upland, CA 91786
Head north on Monte Vista Ave toward Corporate Way
1.0 mi
Continue onto Padua Ave
1.8 mi
Turn right onto Mt Baldy Rd
Destination will be on the left
7.2 mi
Mt Baldy Fire Department

Route 1 Downhill:

Start at Mt Baldy Fire Department, 6736 Mount Baldy Road, Mount Baldy, CA 91759
Head west on Mt Baldy Rd toward Central Ave
7.2 mi
Turn left onto Padua Ave
1.8 mi
Continue onto Monte Vista Ave
2.8 mi
Turn left onto Palo Verde St
344 ft
Use the left 2 lanes to turn left to merge onto I-10 E toward San Bernardino
0.2 mi
23 min (12.0 mi)
Christopher Columbus Transcontinental Hwy, Montclair, CA 91763
Head northeast on I-10 E
5.0 mi
Take exit 54 for Vineyard Ave
0.2 mi
Use the left 2 lanes to turn left onto N Vineyard Ave
Destination will be on the left
0.6 mi
7 min (5.8 mi)
1101-1119 N Vineyard Ave, Ontario, CA 91764

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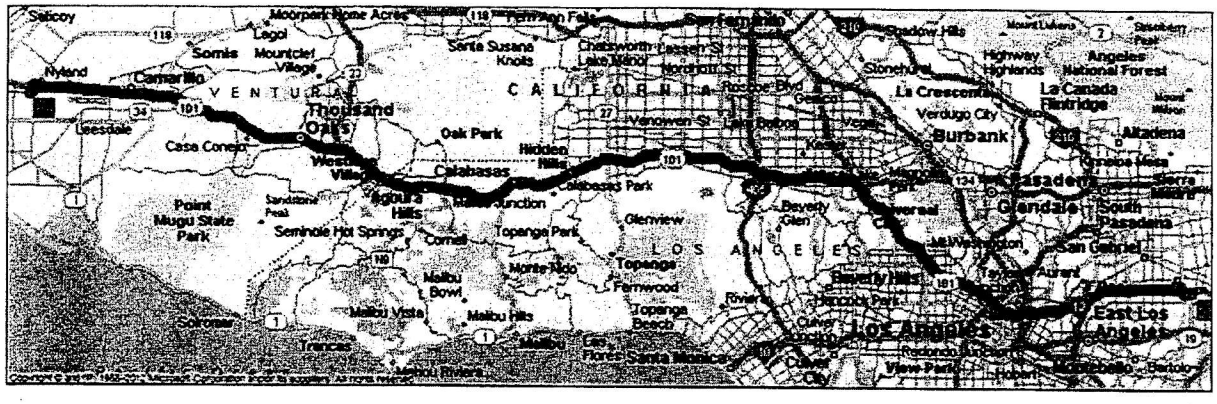
Attachment 7

PROJECT TEST ROUTE 2

(Freeway)



Summary: 69.2 miles (1 hour, 4 minutes)

Mile	Instruction	For	Toward
0.0	**Depart 9450 Telstar Ave, El Monte, CA 91731 on Telstar Ave (West)**	**0.4 mi**	
0.4	Turn RIGHT (North-West) onto CA-19 [Rosemead Blvd]	0.4 mi	
0.9	Turn LEFT (West) onto Glendon Way	43 yds	
0.9	Take Ramp (LEFT) onto I-10 [San Bernardino Fwy]	7.6 mi	I-10 W / Los Angeles
8.6	Keep STRAIGHT onto San Bernardino Fwy	1.6 mi	I-5 N / US-101 / Los Angeles / Sacramento
10.2	Merge onto US-101 [Santa Ana Fwy]	58.0 mi	
68.2	Keep RIGHT onto Ramp	0.2 mi	Santa Clara Ave / Rice Ave
68.4	Turn RIGHT (North) onto Santa Clara Ave	0.1 mi	
68.5	Turn LEFT (South-West) onto N Rice Ave	0.4 mi	
68.9	Turn RIGHT (West) onto E Gonzales Rd	0.2 mi	
69.1	Turn LEFT (South) onto Solar Dr	131 yds	
69.2	**Arrive Sunbelt Enterprises [1801 Solar Dr, Oxnard CA 93030, United States, Tel: +(1)-805-6040700]**		

125 BROAD STREET
NEW YORK, N.Y. 10004-2498

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE

CERTIFIED MAIL®

7019 1640 0000 0505 8149

Via Certified Mail

National FOIA Office,
U.S. Environmental Protection Agency,
1200 Pennsylvania Avenue, NW (2310A),
Washington, DC 20460.